

### **REMARKS/ARGUMENTS**

Claims 1 and 6-10 are pending in this application. By this Amendment, Applicant AMENDS claim 1 and CANCELS claim 6.

Applicant has amended claim 1 to recite the feature of "the composite substrate ... is arranged as a quarter-wave plate," which was similarly recited in Applicant's canceled claim 6, and to delete the feature of "the composite substrate has negative uniaxial anisotropy."

On page 2 of the outstanding Office Action, the Examiner rejected claims 1 and 7 under 35 U.S.C. § 102(b) as being anticipated by Menzer. On page 5 of the outstanding Office Action, the Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Menzer in view of Emerson (U.S. 3,353,895). On page 6 of the outstanding Office Action, the Examiner rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Menzer in view of Babb (U.S. 5,730,922). On page 7 of the outstanding Office Action, the Examiner rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Menzer in view of Speakman (U.S. 6,503,831). On page 8 of the outstanding Office Action, the Examiner rejected claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Menzer in view of Speakman, and further in view of Arakawa (U.S. 2002/0060762) as evidenced by Emerson.

As noted above, Applicant has canceled claim 6. Applicant respectfully traverses the rejections of claims 1 and 7-10.

Applicant's claim 1 recites:

A plastic substrate for use in optical instruments, the plastic substrate comprising:

**a composite substrate in which fibers are embedded in a resin matrix,** the fibers being arranged to extend in two nearly orthogonal directions within a plane of the composite substrate; wherein

**the composite substrate** substantially transmits visible radiation, has an in-plane retardation of substantially zero, and **is arranged as a quarter-wave plate.** (emphasis added)

As noted above, Applicant has amended claim 1 to recite the feature of "the composite substrate ... is arranged as a quarter-wave plate," which was similarly recited in Applicant's

canceled claim 6. In the first full sentence on page 6 of the outstanding Office Action, the Examiner admitted that Menzer fails to teach or suggest this feature.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Menzer.

In anticipation of the Examiner relying upon Menzer and Emerson to reject Applicant's amended claim 1 in a similar manner as the Examiner rejected Applicant's canceled claim 6, Applicant respectfully submits that a rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Menzer in view of Emerson would be improper.

As noted above, in the first full sentence on page 6 of the outstanding Office Action, the Examiner admitted that Menzer fails to teach or suggest the feature of "the composite substrate ... is arranged as a quarter-wave plate." In the second full paragraph on page 6 of the outstanding Office Action, the Examiner alleged that col. 6, ll. 30-40 of Emerson teaches this feature.

Applicant respectfully disagrees.

Emerson teaches forming a quarter-wave retardation layer by depositing zinc sulphide or silver chloride on the layer **10** of Emerson. Col. 6, lines 27-44 of Emerson states:

Other special purpose evaporable materials used in making light polarizers of the present invention comprise high-index, transparent and colorless materials adapted  
30 to be rendered birefringent, such as zinc sulphide or silver chloride. A quarter-wave retardation layer of either of the aforesaid birefringent materials deposited, as minute filaments of the character described, upon the layer **10** in a direction at 45° to the long direction of filaments **32** pro-  
35 vides a circular polarizer. Another method of making a circular polarizer involves a deposition of the filaments of the invention on a suitably oriented doubly-refracting layer of a proper retardation value, e.g., one-quarter or three-quarters of a wavelength, etc. Thus, for example, a  
40 deposition of the filaments on a section of mica having a retardation value of three-quarters of a wavelength, the direction of deposition being at 45° to a principal axis of said section, was accomplished and provided such a polarizer.

However, Applicant's claim 1 recites "a composite substrate[,] in which fibers are embedded in a resin matrix", "... is arranged as a quarter-wave plate." However, Emerson uses an additional layer of zinc sulphide or silver chloride as a quarter-wave plate. No portion of Emerson, including the above-quoted portion relied upon by the Examiner, teaches or suggests how to arrange the composite substrate of Menzer, in which fibers are embedded in a resin matrix, to be a quarter-wave plate as recited in Applicant's claim 1.

Thus, Menzer and Emerson fails to teach or suggest the feature of "the composite substrate ... is arranged as a quarter-wave plate" as recited in Applicant's claim 1.

Accordingly, Applicant respectfully submits that a rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Menzer in view of Emerson would be improper.

The Examiner has relied upon Babb, Speakman, and Arakawa to allegedly cure various deficiencies in Menzer and Emerson. However, Babb, Speakman, and Arakawa, applied alone or in combination with Menzer and Emerson, fail to teach or suggest the feature of "the composite substrate ... is arranged as a quarter-wave plate" in combination with the other features recited in Applicant's claim 1.

Accordingly, Applicant respectfully submits that the prior art of record, applied alone or in combination, fails to teach or suggest the unique combination and arrangement of elements recited in claim 1 of the present application. Claims depend upon claim 1 and are therefore allowable for at least the reasons that claim 1 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

Application No. 10/538,118  
October 26, 2009  
Reply to the Office Action dated July 24, 2009  
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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Dated: October 26, 2009

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